

IN THE CLAIMS

1. **(Currently Amended)** An isolated polynucleotide molecule ~~encoding a human vitamin D receptor (VDR) isoform, said polynucleotide molecule~~ comprising:

i) ~~a nucleotide sequence having 95% or more sequence identity to a nucleotide sequence encoding exon 1d of the human~~ **vitamin D receptor (VDR) gene, or a complement thereof.**

2. **(Currently Amended)** A polynucleotide molecule according to claim 1, wherein said nucleotide sequence further ~~includes~~ **comprises:**

i) ~~a nucleotide sequence having 95% or more sequence identity to a nucleotide sequence encoding an amino acid sequence of exon 1b,~~ **or a complement thereof;**

ii) ~~a nucleotide sequence having 95% or more sequence identity to a nucleotide sequence encoding an amino acid sequence of exon 1c,~~ **or a complement thereof;** or

iii) a nucleotide sequence having **comprising** i) and ii).

3. **(Currently Amended)** A polynucleotide molecule according to claim 1, wherein the nucleotide sequence includes, from 5' to 3':

(i) ~~a sequence having 95% or more sequence identity to a nucleotide sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 so as to encode a VDR isoform of approximately 477 amino acids,~~ **or a complement thereof;**

(ii) ~~a sequence having 95% or more sequence identity to a nucleotide sequence encoding an amino acid sequence of exons 1d and 2-9 so as to encode a VDR isoform of approximately 450 amino acids,~~ **or a complement thereof;** or

(iii) ~~a sequence having 95% or more sequence identity to a nucleotide sequence encoding an amino acid sequence of exons 1d and 2-9 and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids,~~ **or a complement thereof.**

4. **(Currently Amended)** A polynucleotide molecule according to claim 1, wherein the polynucleotide comprises a nucleotide sequence ~~having 95% or more sequence identity to a nucleotide sequence or encoding an amino acid sequence encoded by SEQ ID NO:2, SEQ ID NO:3 or SEQ ID NO:4,~~ **or a complementary sequence thereof.**

5. – 8. (Canceled)

9. **(Currently Amended)** A plasmid or expression vector ~~including~~ **comprising** a polynucleotide molecule according to claim 1.

10. **(Original)** A host cell transformed with a polynucleotide molecule according to claim 1 or a plasmid or expression vector according to claim 9.

11. **(Original)** A host cell according to claim 10, wherein the cell is a mammalian cell.

12. **(Original)** A host cell according to claim 10, wherein the cell is a NIH 3T3 or COS 7 cell.

13. **(Currently Amended)** A method of producing a VDR or VDR isoform polypeptide comprising culturing a host cell of claim 10 under conditions enabling the expression of the polynucleotide molecule **to produce the VDR or VDR isoform polypeptide** and, optionally, recovering the VDR or VDR isoform polypeptide .

14. **(Previously Presented)** A method according to claim 13, wherein the VDR or VDR isoform polypeptide is expressed onto the host cell membrane or other sub-cellular compartment.

15. – 18. (Canceled)

19. **(Currently Amended)** An oligonucleotide or polynucleotide probe comprising a-nucleotide sequence of 10 or more **consecutive** nucleotides **of the nucleotide sequence of any one of claims 21-24 or 28.** ~~, the probe comprising a nucleotide sequence such that the probe specifically hybridises to a polynucleotide molecule according to any one of claims 1-8 under high stringency conditions.~~

20. **(Currently Amended)** An antisense polynucleotide molecule comprising **the** a nucleotide sequence **of any one of claims 21-24 or 28.** ~~capable of specifically hybridising to a mRNA molecule~~

~~which encodes a VDR or VDR isoform encoded by a polynucleotide molecule according to any one of claims 1-8, so as to prevent translation of the mRNA molecule.~~

21. **(Currently Amended)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 75% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

22. **(Currently Amended)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 85% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

23. **(Currently Amended)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 95% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

24. **(Currently Amended)** An isolated polynucleotide molecule comprising a nucleotide sequence of

5'GTTTCCTTCTTCTGTCGGGGCGCCTTGGCATGGAGTGGAGGAATAAGAAAAGGAG
CGATTGGCTGTCGATGGTGCTCAGAACTGCTGGAGTGGAGG3' (SEQ ID NO:1), or a
complement thereof.

25. – 26. **(Canceled)**

27. **(Currently Amended)** An isolated polynucleotide molecule comprising a nucleotide sequence of nucleotide residues 30-95 of SEQ ID NO:1, or a complement thereof.

28. **(Currently Amended)** An isolated polynucleotide molecule encoding a human vitamin D receptor (hVDR) isoform, said polynucleotide molecule comprising a nucleotide sequence encoding the amino acid sequence MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

29. **(Canceled)**

30. **(Currently Amended)** A plasmid or expression vector including a polynucleotide molecule according to claim 21, 22, 23, 24, 27 or 28.

31. **(Currently Amended)** A recombinant host cell containing a polynucleotide molecule according to claim 21, 22, 23, 24, 27 or 28.

32. **(Currently Amended)** A recombinant host cell containing a plasmid or expression vector according to claim ~~31~~ 30.

33. **(Previously Presented)** A host cell according to claim 32, wherein the cell is a mammalian cell.

34. **(Previously Presented)** A host cell according to claim 32, wherein the cell is a NIH 3T3 or COS 7 cell.

35. **(Currently Amended)** A method of producing a VDR or VDR isoform polypeptide-comprising

culturing a host cell ~~of claim 32~~ comprising a plasmid or expression vector comprising a polynucleotide molecule encoding a human vitamin D receptor (VDR) or VDR isoform, said polynucleotide comprising the nucleotide sequence of a polynucleotide according to claim 21, 22, 23, 24, or 28, said culturing being under conditions enabling the expression of the VDR or VDR isoform ~~polynucleotide molecule~~ and,

optionally, recovering the VDR or VDR isoform polypeptide.

36. **(Previously Presented)** A method according to claim 35, wherein the VDR or VDR isoform polypeptide is expressed onto the host cell membrane or other sub-cellular compartment.

37. **(New)** A polynucleotide molecule according to claim 21, wherein said nucleotide sequence further comprises:

- i) a nucleotide sequence encoding an amino acid sequence of exon 1b of the human vitamin D receptor (VDR) isoform, or a complement thereof;
- ii) a nucleotide sequence encoding an amino acid sequence of exon 1c of the human VDR isoform, or a complement thereof; or
- iii) a nucleotide sequence comprising i) and ii).

38. **(New)** A polynucleotide molecule according to claim 21, wherein the nucleotide sequence comprises, from 5' to 3':

- (i) a sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 of the human vitamin D receptor (VDR) isoform so as to encode a VDR isoform of approximately 477 amino acids, or a complement thereof,
- (ii) a sequence encoding an amino acid sequence of exons 1d and 2-9 of the human VDR isoform so as to encode a VDR isoform of approximately 450 amino acids, or a complement thereof, or
- (iii) a sequence encoding an amino acid sequence of exons 1d and 2-9 of the human VDR isoform and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids, or a complement thereof.

39. **(New)** A polynucleotide molecule according to claim 22, 23, or 24, wherein said nucleotide sequence further comprises:

- i) a nucleotide sequence encoding an amino acid sequence of exon 1b of the human vitamin D receptor (VDR) isoform, or a complement thereof;
- ii) a nucleotide sequence encoding an amino acid sequence of exon 1c of the human VDR isoform, or a complement thereof; or
- iii) a nucleotide sequence comprising i) and ii).

40. **(New)** A polynucleotide molecule according to claim 22, 23, or 24, wherein the nucleotide sequence comprises, from 5' to 3':

(i) a sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 of the human vitamin D receptor (VDR) isoform so as to encode a VDR isoform of approximately 477 amino acids, or a complement thereof,

(ii) a sequence encoding an amino acid sequence of exons 1d and 2-9 or the human VDR isoform so as to encode a VDR isoform of approximately 450 amino acids, or a complement thereof, or

(iii) a sequence encoding an amino acid sequence of exons 1d and 2-9 of the human VDR isoform and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids, or a complement thereof.